

MISCELLANEOUS.

The English Pterodactyles.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,—In February 1865 a paper of mine was printed in the 'Annals' "On the Literature of English Pterodactyles," written chiefly as a note to Prof. Buckland's account of the *Dimorphodon*. Since then, additional materials have come under my notice, and I wish here to modify, in accordance with our newer knowledge, some of the conclusions then arrived at.

Dr. Buckland's figure is pl. 27, Geol. Trans. ser. 2. vol. iii.

The vertebræ at K, which Dr. Buckland had supposed to be the tail, I then showed reason for regarding either as cervical or sacral. They prove to be sacral, and show a remarkable character (probably ordinal) in being unanchylosed.

The vertebræ which appeared, in the drawings that my notes were written from, to have the centrum convex in front, have the neural arch crushed, so that zygapophyses which seem to look down really look inward. The *Dimorphodon*, like most other Pterodactyles, has the vertebræ of the trunk proœlian, as Prof. Owen long since stated.

The bone figured in the Palæontographical Society's Monograph for 1851, pl. 30, in the collection of the late Mr. Toulmin Smith, has lost its proximal epiphysis. It is the first phalange.

The bone which Prof. Owen, in his Monograph of 1859 (pl. 4. f. 6-8), regarded with doubt as a frontal, and which in 1865 appeared to be the vomer, is almost certainly part of the sacrum.

The skulls and casts of the brain-cavity since found more than justify all that was urged, in the 'Annals' of May 1866, in favour of the claim of Pterodactyles to take rank altogether above reptiles, and as a parallel group with birds.

St. John's College, Cambridge.

HARRY SEELEY.

Impregnation of the Balani.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,—Reading a short time since in Dr. Fritz Müller's 'Für Darwin' that he had strong reasons to believe that the gregarious *Balani* were not only hermaphrodite, but also impregnated one another (he came to this conclusion from having observed specimens that, from their colour and general appearance, were hybrid between two species), recalled to my recollection that some few years since Mr. R. Bishop, of this town, informed me that he had actually seen this impregnation take place. At the time I asked him to write me an account of it, which I sent to Mr. Darwin. I have now asked him to recommit his observations to paper, which I send to you for the benefit of the readers of your journal, and which I think sets the doubt at rest.

8 Mulgrave Place, Plymouth, I am, Gentlemen, yours faithfully,
May 16, 1869. C. SPENCE BATE.

“MY DEAR SIR,—Natural history has been so little my study that I should not have presumed to claim a place among observers if you had not encouraged me to believe that a record of an observation which I made some time since on the habits of the *Balanus* may possess some interest among naturalists. I had at that time a small marine aquarium, in which I often kept specimens of *Serpulæ*, Sea-anemones, *Balani*, &c. It was placed on a shelf, where it had a good through light, and any movements or actions of its occupants could be well seen. On one occasion I watched for some minutes a proceeding in a group of the common *Balanus*, which I have no doubt was the process of impregnation. A long flexible thread-like instrument, of at least double the length of the cirrus, proceeded from near the centre of one of the creatures, and was waved around as if in quest of something. On meeting the cirrus of some of the surrounding animals this was eagerly seized and inserted into them successively, all the animals during the operation giving evidence of a high state of excitement. I regret that, from not being aware at the time that the observation might possess any value, I did not make a record of it, nor did I observe the details with as much minuteness as I should otherwise have done; but I have no hesitation in asserting that the above is substantially correct, and I should think the observation might be easily repeated if desired.

Yours truly, R. B.”

Calcareous Sponges. By H. J. CARTER, F.R.S.

With reference to the statement in the ‘Annals’ (vol. iii. p. 16, 1869) that the spicules of *Grantia ciliata* &c. which I had examined had no central canal, I now find, by subsequent examination, that a trace of something like one may often be seen towards the base of the straight arm of the triradiate spicule; and perhaps this may be patent here and there; but it is as often represented by a cast, probably of the same material as that composing the spicule, projecting from its fractured end, and this only in the fresh state, for the heat of mounting in balsam destroys it, while for the most part there is no trace whatever that I can observe. Nor does the calcareous spicule present the concentric lamination seen in the siliceous one, although both break with a similar conchoidal fracture. Perhaps the material, and not the organology, may account for these differences. At any rate, you have only to look for the axial canal in the siliceous spicule to see it, whereas in the calcareous one you can only fancy its existence here and there, in *Grantia ciliata*.

Budleigh-Salterton, May 28, 1869.

Are Unios sensitive to Light? By ISAAC LEA.

In the March No. of this Journal, p. 286 (‘Annals,’ May 1869, p. 399), Mr. C. A. White heads an article with “*Are Unios sensitive to light?*” He then gives some experiments which he instituted on the subject, and he seems to be under the impression that his observations were entirely new.

If your readers will turn to the ‘Proceedings of the Acad. Natural Sciences of Philad.’ for 1857, they will find a communication from me where the subject of *touch, hearing, and sight in the Unionidae*